Hakowski, Denise

From: Hakowski, Denise
Sent: Wednesday, January 06, 2016 3:45 PM
To: Everett, Alan; Kuo-Liang Lai (Lai.Kuo-Liang@epa.gov)
Cc: Fields, Jenifer; Brundage, Jennifer; Ateyeh, Laurel; MacKnight, Evelyn; Barron, Thomas; Blanco-Gonzalez, Joel
Subject: FW: Copper WER and BLM - Green Street Sewage Treatment Plant - NPDES Permit PA0021181
Attachments: GreenStreetSTP.blm; GreenStreetSTP.det.txt; GreenStreetSTP.sim.txt; GreenStreetSTP_IWQC.txt; GreenStreetSTPLC50.txt.txt; GreenStreetSTPWERReviewSERO.xlsx

Hi Alan,

Thanks for your comments. K.L. Lai is reviewing the WER for us, so I am forwarding your message to him, and I am cc:ing Jenn Brundage, our liaison in EPA HQ as well.

I appreciate your questions. I know Tom is planning on including the BLM in 93.8d(c) in the upcoming review, but that PA's regs would still include the WER as well. I think (and Tom, correct me if I'm wrong) he would have liked to say that the BLM was the preferred method in effluent dominated waters, but would have liked to have something from EPA to back that up. I explored getting something from EPA to that effect a while back, but it went nowhere. I do know that EPA does believe that the BLM is more scientifically vigorous than the WER.

This is also coming up with other SE permits (e.g., Abington). Abington currently has a WER that was part of a "Group WER" that was done in 1999/2000 (the Group WER was done prior to EPA's Streamlined Copper WER guidance). The permit renewal is requiring the discharger to do a new WER, and I have been working with our permits group in hopes that the renewed permit requires the discharger to use the BLM instead.

Once K.L. has an opportunity to review everything, I think it would be good to get together and discuss how EPA can best assist PADEP.

Thanks again,

Denise

From: Everett, Alan [mailto:aeverett@pa.gov]
Sent: Wednesday, January 06, 2016 10:45 AM
To: Hakowski, Denise <Hakowski.Denise@epa.gov>; Barron, Thomas <tbarron@pa.gov>
Cc: Ateyeh, Laurel <lateyeh@pa.gov>; Fields, Jenifer <jefields@pa.gov>
Subject: Copper WER and BLM - Green Street Sewage Treatment Plant - NPDES Permit PA0021181

Hi Tom and Denise,

Attached are the BLM files for the two simulated downstream samples that were collected when the WER water was collected for the Green St. STP's WER. I have also included an excel file which summarizes the BLM data that SER has to date. The only changes I made to the data from my previous e-mail regarding Green St. was getting and using the effluent temperature for the respective collection dates instead of the toxicity test temperature. While the W.Br. Neshaminy BLM results are the only results that rely on what I would consider a sufficient dataset, the three cases show a similar trend (in SE effluent dominated streams the BLM provides much lower WQC than WER). Unless you have

concerns about the WER study, SE plans on using the study to develop Cu limits for the existing permit. **However, SE does have concerns and questions that will need to be answered regarding the BLM** :

- EPA's technical document for the BLM indicates that WQC developed using the WER and BLM should be similar. Evidence indicates they are dissimilar in the types of streams (effluent dominated) where SERO has a need to develop site-specific criteria for Cu. Both are currently considered scientifically valid methods and we are currently using the less conservative method. **Are we protecting aquatic life from Cu toxicity with the WER derived WQC?** As I have mentioned previously, all of these streams have impairments and stressors not related to Cu toxicity (upstream conditions) that limit our ability to examine this question. I think we will need to rely on what is considered the best science for criteria development.
- My understanding is that during the current triennial review DEP will be making changes to 93.8d(c) to include the BLM for the development of site-specific water quality criteria for Cu. If we will be excluding the WER in 93.8d(c) I suspect in some cases we will have criteria than cannot be met and appeals from permittees. If we are not excluding the WER from 93.98d(c) I don't think we will see changes in how SE develops permits with regard to Cu toxicity unless we can document Cu toxicity induced changes in the macrobenthos downstream from the discharge (difficult with all the stormwater and nutrients we have flowing through the SE).

Let me know if you want to discuss.

Thanks,

Alan

Alan Everett | Water Pollution Biologist 3
PA Department of Environmental Protection
Southeast Regional Office
2 East Main Street | Norristown, PA 19401
Phone: 484.250.5151 | Fax: 484.250.5971
www.depweb.state.pa.us

From: Ateyeh, Laurel
Sent: Tuesday, January 05, 2016 1:38 PM
To: 'Denise P. Hakowski' (hakowski.denise@epa.gov)
Cc: Barron, Thomas; Everett, Alan
Subject: FW: Copper WER - Green Street Sewage Treatment Plant - NPDES Permit PA0021181

Hi Denise,
I'm forwarding Alan Everett's comments for your consideration as well as Tom's.

Laurel Ateyeh | Environmental Engineering Specialist
Department of Environmental Protection | Southeast Regional Office
2 East Main Street | Norristown, PA 19401
Phone: 484.250.5198 | Fax: 484.250.5971
www.depweb.state.pa.us

From: Everett, Alan
Sent: Monday, January 04, 2016 1:47 PM
To: Barron, Thomas
Cc: Ateyeh, Laurel
Subject: RE: Copper WER - Green Street Sewage Treatment Plant - NPDES Permit PA0021181

Hi Tom,

I had a chance to review the Green Street STP Copper WER report provided by TetraTech. I have attached a pdf of my study review checklist and an excel file in which I checked the hardness normalizations for the study, and provide BLM results for the simulated downstream (UNT Neshaminy) water. **In general I think the WER study is acceptable and that permits should use the WER derived in-stream criteria for development of Cu limits for the Green St. STP. There is a considerable difference between the average simulated downstream hardness found in the WER study (234mg/l), and the hardness used for the existing permit (186mg/l). I would recommend that the more conservative hardness be used by DEP unless the discharger can document a higher hardness with a larger dataset.**

Comments on the report based on EPA's review checklist :
Question 5 – did not review
Question 12 – randomization was not documented in the report, but Tetra Tech indicated they followed the acute methods (EPA-821-R-02-012) which requires randomization.
Question 21 – lab water hardness for the 2nd test (232mg/l) was outside the required range, but comparable to downstream simulated water.
Question 22 – lab water hardness for test one (152 mg/l) was not close to simulated downstream water (222mg/l). If TetraTech had obtained hardness data prior to the first test, they could have better approximated lab water hardness.
Question 30 – the dilution factor used in the definitive tests was not >= 0.65. a dilution factor of 0.5 was used and that is what we had approved in the study plan (I missed this in the study plan).
Question 42 – no, four significant digits were not retained in all endpoints
Question 54 – did not review
Question 64 – acute and chronic criteria were calculated, but they were calculated based on a hardness of 100 mg/l. Downstream hardness used to develop limits in the current permit is 186 mg/l, and average hardness for the simulated downstream water in the current study was 234 mg/l (n=2). Would recommend calculating criteria based on hardness used in current permit.

Note that the BLM calculation provides criteria which are lower than Chapter 93 Hardness Criteria (I am going to check the run before I send you the BLM files, I have to do this at home). Also note that temperature was not included in TetraTech's Table 4. I used 25degC (test temperature).

The Green Street STP NPDES Fact Sheet also indicates that the facility has an existing criteria recalculation for copper. I have not seen the recalculation, but if it is similar to the Souderton recalculation we had discussed, I have similar reservations about it that are copied below. Not sure if EPA has new guidance related to the recalculation procedures.

When I was reviewing the UGTMA BLM report, I read and skimmed EPA's "Aquatic Life Ambient Freshwater Quality Criteria – Copper" (2007). This reading rekindled my concern about dropping cladoceran toxicity as part of the recalculation procedure (ea. Sourderton STP). On page 15 under 4.1 Summary of Acute toxicity to Freshwater Animals and Criteria Calculations, the above document indicates that invertebrates were more sensitive than fish, and cladocerans were among the most sensitive species. The paper references 110 **invertebrate** acute toxicity tests, of which 80 (73%) were conducted on cladocerans. For Ephemeroptera, Plecoptera, and Trichoptera (EPT) species, only one test was performed (0.9% of tests). EPT taxa are considered the most diverse group of invertebrates found in unimpaired lotic environments. How can we accept a recalculation that eliminates cladocerans when it appears we do not have adequate testing of lotic invertebrate groups that should be represented?

Let me know if you want to discuss,

Thanks,

Alan

Alan Everett | Water Pollution Biologist 3
PA Department of Environmental Protection
Southeast Regional Office
2 East Main Street | Norristown, PA 19401
Phone: 484.250.5151 | Fax: 484.250.5971
www.depweb.state.pa.us

From: Everett, Alan
Sent: Friday, December 18, 2015 11:35 AM
To: Barron, Thomas
Cc: Moore, Bonita
Subject: Copper WER - Green Street Sewage Treatment Plant - NPDES Permit PA0021181

Hi Tom,

SERO has received three copies of the Green Street STP Cu WER. I am sending a copy to you via interoffice mail today. Laurel also sent out a copy to Denise today. **SERO would like to have CO comments back in 45 days (~ 2/3/2016)**.

I was unable, as I had intended, to conduct BLM sampling for this site or other sites in the region this summer. I was curious if DEP will be incorporating changes to 93.8d in the Triennial Review, and if so what those changes will be. I was also curious if we have heard anything back from EPA Headquarters regarding the large differences seen using the BLM and WER in the W.Br. Neshaminy.

Let me know if you need to discuss,

Thanks,

Alan

Alan Everett | Water Pollution Biologist 3
PA Department of Environmental Protection
Southeast Regional Office
2 East Main Street | Norristown, PA 19401
Phone: 484.250.5151 | Fax: 484.250.5971
www.depweb.state.pa.us